TRAINING DUMMY WITH SIMULATED WOUND

BACKGROUND OF THE INVENTION

Dummies of many types are available for teaching various first aid techniques. The members of such dummies are usually formed from a foamed plastic flesh material and are covered by a separate simulated skin. Some of these dummies include simulated wounds formed in the skin to which is connected a plastic tubing which runs beneath the skin to a supply of simulated blood. The blood supply might be contained, for example, in a squeezable bulb manipulated by an instructor to simulate arterial or venous bleeding. A student is taught to control bleeding by pressure applied either to a pressure point or to the wound itself.

One disadvantage of the prior art construction is that the tube, lying just beneath the skin, does not have the same pressure characteristics as a human blood vessel lying beneath a layer of flesh. It will also be apparent that it would be desirable, if possible, to eliminate the necessity for separate skin and flesh portions. It has now become possible to achieve this objective by means of a foam which forms an integral skin at the surface of the mold. One such foam "FLEXIPOL" FSF-106 is available from Flexible Products Company, Marietta, Ga. However, use of such a foam eliminates the previous pathway beneath the skin for a resilient tube and introduces the problem of how to mold such a limb around a flexible resilient tube such as a nylon tube.

Accordingly, it is a primary object of the present invention to provide a method for supporting a resilient flexible tube within a mold during a molding operation. Another object is to provide an integral skin foam body member for a first aid training dummy, having a simulated blood vessel molded therein. Other objects, features and advantages will become apparent from the following description and appended claims.

SUMMARY OF THE INVENTION

Formation of a simulated wound in a training dummy which comprises providing a first concave mold member defining on its inner surface a raised, wound defining projection. Means are provided adjacent the projection for temporarily supporting the end of a wire. A relatively stiff support wire is passed through a length of resilient tubing with the first and second ends of the wire extending, respectively, from the first and second ends of the tubing. The wire-stiffened tubing is positioned in the first mold member with the first end of the wire supported by the temporary support means and the second ends of the wire and tubing positioned outside the mold member. A second concave mold member is positioned against the first to define therewith a mold cavity approximating the shape of a human body member. The cavity is filled with a curable molding composition and the composition is cured to form a simulated human body member. The support wire is then removed from the tubing.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a partial plan view of an arm for a training dummy having a simulated wound, the arm being partially broken away to illustrate its internal construction;

FIG. 2 is an elevational view of the arm of FIG. 1;

FIG. 3 is a cross section taken substantially along the line 3—3 of FIG. 2;

FIG. 4 is a partial view of an upper half mold for forming the arm of FIGS. 1–3, showing a resilient tubing positioned therein prior to molding;

FIG. 5 is a partial view of a lower half mold showing the skeletal members positioned therein prior to molding;

FIG. 6 is a cross section through the assembled mold formed by the upper and lower mold halves; and

FIG. 7 is an enlarged view illustrating the manner in which the flexible tube is supported within the mold.

DESCRIPTION OF THE PREFERRED EMBODIMENT

With particular reference to FIGS. 1–3, there is illustrated a simulated limb 10 in the shape of an upper arm molded from an integral skin foam 12. At the shoulder area the foam defines a recess 14 for receiving a female pivot joint (not shown) on a torso. Extending into the recess is a male pivot joint 16 which defines a circular opening 18 therethrough. Formed in the foam 12, and aligned with the opening 18, is a hinge pin passage 20 which extends through the surface of the integral skin foam. A portion of the pivot joint 16 is molded within the limb and defines a circular socket 22 which supports one end of a simulated upper arm bone 24. Cemented or otherwise secured to the arm bone 24 is a short length of rigid tubing 26 whose purpose will be later explained. The skinned surface of foam 12 defines a depression forming a simulated wound 28. The wound 28 is positioned on a portion of the surface relatively close to the tubing 26. Molded into the foam 12 is a resilient flexible tube 30 formed of a material such as nylon. One end of this tube communicates with the surface of the limb through wound 28 and the other end is adapted to be connected to a suitable fluid reservoir or pump.

It will now be apparent that there is illustrated in FIGS. 1–3, a limb for a training dummy formed of an integral skin foam. The foam contains a flexible tubing through which the simulated blood may be pumped to emerge from the wound. By applying force, either directly onto the wound 28 or at a pressure point above the wound, the tube 30 may be pinched closed by being squeezed between the externally applied force and the rigid tubing 26. In this manner proper control of bleeding can be taught.

The method by which the limb is formed will now be explained with reference to FIGS. 4–7. FIG. 4 illustrates an upper half mold 32 defining therein a half cavity 34 and a recess 36 communicating with the cavity. The wall of the upper mold also defines an opening 38 therethrough. The inner surface of the mold half 32 carries wound defining projection 40 upon which is mounted an eyelet 42. The lower half mold 44 shown in FIG. 5 defines a mating half cavity 46 and recess 48. A hole 50 extends through the mold wall as shown in FIG. 6. Mounted in the recess 48 is a support bracket 52 to which is mounted at its inner end the male pivot 16 by means of a pin 54 supported in hole 50. The socket 22, upper arm bone 24, and tubing 26 are thus supported in the mold cavity as shown in FIG. 5. Prior to assembling the mold, a relatively stiff support wire 56 is pushed into the end of the flexible tubing 30 with its ends protruding from the ends of the tubing. The tubing is then inserted through the opening 38 in the